

CLAIMS

What is claimed is:

1. A method for determining whether a compound influences a phase in the life cycle of a virus, said method comprising the steps of:

- (a) providing a cell with at least those elements of the virus sufficient for performing said phase in the virus' life cycle;
- (b) providing said cell with the compound, wherein step (a) and (b) may be performed subsequently, in any order, or simultaneously; and
- (c) determining whether said phase in the virus' life cycle is influenced by the compound,

said cell comprising a nucleic acid encoding an adenovirus early protein.

2. The method according to claim 1, wherein said nucleic acid is integrated into the genome of said cell.

3. The method according to claim 1 or claim 2, wherein said virus is selected from the group consisting of an adenovirus, an enterovirus, a herpes virus, an orthomyxovirus, a paramyxovirus, a retrovirus, a rotavirus, a coronavirus, a flavivirus, a togavirus, a hepatitis causing virus, a pestivirus, a rhabdovirus and a Bunyaviridae virus.

4. The method according to claim 1, claim 2, or claim 3, wherein said cell is provided with an essentially intact virus.

5. The method according to claim 1, claim 2, claim 3, or claim 4, wherein said cell is a human cell.

6. The method according to claim 1, claim 2, claim 3, claim 4, or claim 5, wherein said cell is kidney, retina or amniotic fluid origin.

7. The method according to claim 1, claim 2, claim 3, claim 4, claim 5, or claim 6, wherein the adenovirus early protein comprises an adenovirus early region 1 protein or an adenovirus early region 2 protein.

8. The method according to claim 1, claim 2, claim 3, claim 4, claim 5, claim 6, or claim 7, wherein determining whether a compound influences a phase in the life cycle of a virus comprises examining a cellular protein's activity, a cellular protein's amount, or the activity and amount of a cellular protein.

9. The method according to claim 1, claim 2, claim 3, claim 4, claim 5, claim 6, claim 7 or claim 8, wherein determining whether a compound influences a phase in the life cycle of a virus comprises examining the interaction of said virus with said cell.

10. The method according to claim 1, claim 2, claim 3, claim 4, claim 5, claim 6, claim 7 claim 8, or claim 9, wherein determining whether the compound influences a phase in the life cycle of a virus comprises examining the virus' activity, the amount of the virus, the activity of a fragment of the virus, the amount of a fragment of the virus, or a mixture thereof.

11. A method according to claim 1, claim 2, claim 3, claim 4, claim 5, claim 6, claim 7 claim 8, claim 9, or claim 10, wherein determining whether the compound influences a phase in the life cycle of a virus comprises examining the viability of said cell.

12. A method for identifying a compound with antiviral activity comprising the steps of:

- (a) providing a cell with at least a fragment of a virus, said fragment capable of performing a step in the life cycle of said virus;
- (b) providing said cell with a compound; wherein steps (a) and (b) may be performed subsequently, in any order, or simultaneously; and
- (c) determining whether said compound is capable of influencing said step in the life cycle of said virus,

wherein said cell comprises a nucleic acid encoding an adenovirus early protein.

13. The method according to claim 12, wherein said virus is selected from the group consisting of an adenovirus, an enterovirus, a herpes virus, an orthomyxovirus, a paramyxovirus, a retrovirus, a rotavirus, a coronavirus, a flavivirus, a togavirus, a hepatitis causing virus, a pestivirus, a rhabdovirus and a Bunyaviridae virus.

14. The method according to claim 12 or 13, wherein said compound is part of a compound library.

15. The method according to any one of claims 12 to 14, wherein the method is performed in a high-throughput setting.

16. The method according to any one of claims 12 to 15, wherein said method further comprises the step of isolating said compound.

17. A method for identifying a compound with antiviral activity comprising:

- (a) providing a cell from a first collection of cell cultures with at least a fragment of a first virus, said fragment capable of performing a step in the life cycle of said first virus;
- (b) providing said cell from a first collection of cell cultures with a compound;
- (c) determining whether said compound is capable of influencing said step in the life cycle of said first virus;
- (d) providing a cell from a second collection of cell cultures with at least a fragment of a second virus, said fragment capable of performing a step in the life cycle of said second virus;
- (e) providing said cell from a second collection of cell cultures with a second compound; and
- (f) determining whether said second compound is capable of inhibiting said step in the life cycle of said second virus,

wherein said cells from said first and said second collection comprise a nucleic acid encoding an adenovirus early protein and wherein said first and said second library of compounds may be the same or different.

18. A method for determining the effect of the absence of a compound on a phase in the life cycle of a virus comprising the steps of:

- (a) culturing a cell otherwise capable of supporting said phase in the life cycle of a virus in the presence of said virus under conditions conducive to said phase in the life cycle in the absence of the compound; and
- (b) examining the effect of the absence of the compound on said phase in the life cycle of said virus.

19. The method according to claim 18, wherein said compound is a natural constituent of said cell or said virus.

20. The method according to claim 19, wherein said natural constituent is a receptor protein, or a fragment thereof, for said virus.

21. The method according to claim 17, claim 18, claim 19 or claim 20, wherein said cell is comprised in a set of clones of cells or a library of cells, said cells comprising a gene being effectively blocked from being expressed.

22. The method according to claim 17, claim 18, claim 19, claim 20, or claim 21, wherein said cell comprises a nucleic acid encoding an adenovirus early protein.